

SALVINIA MOLESTA (SALVINIACEAE), NEW TO TEXAS AND LOUISIANA

COLETTE C. JACONO

United States Geological Survey

7920 NW 71st St.

Gainesville, FL 32653, U.S.A.

Initially discovered at a schoolyard demonstration pond in southeastern Texas, the Federal noxious weed *Salvinia molesta* Mitchell has recently been found in abundance at Toledo Bend Reservoir. This 75,300 ha impoundment of the Sabine River forms a 145 km border between Texas and Louisiana and is a popular bass fishing lake.

Native to a small region of southeastern Brazil (Forno 1983), *S. molesta* has dominated water bodies over an expansive range including regions of Africa, Asia, Australia and the South Pacific (Mitchell 1972; Forno & Harley 1979). Vegetative reproduction and rapid growth rates contribute to the invasiveness of this plant, typically resulting in dense surface mats that cover open water, degrade aquatic habitat, and constrain the use of reservoirs and waterways (Mitchell & Tur 1975; Thomas & Room 1986). Until now, *S. molesta* has been successfully intercepted at nurseries, botanical gardens, and at a private pond (Myers 1982; Johnson 1995), precluding naturalization in the United States. Likely sources for the introduction are local nurseries found distributing the species as an ornamental water garden plant (Rhandy Helton, Texas Parks and Wildlife Department, personal communication).

This is the second *Salvinia* species introduced to these states. *Salvinia minima* was first reported from Louisiana in 1980 (Landry 1981) and from Texas in 1993 (Hatch 1995). Its distribution has increased extensively since these reports (Montz 1989). The two species are readily distinguished by the multicellular hairs on the upper frond surface. The apex of each hair is divided into four branches. In *S. molesta*, the tips of the branches are joined to form a cage-like structure, while in *S. minima*, branches are spreading and free at the tips. Leaf hair features may be viewed with a 10X lens and can be used by biologists for early field detection.

This report documents an introduction that constitutes a serious threat to aquatic systems throughout the southern United States. *Salvinia molesta* has been found above the high water level at public ramps and roads along Toledo Bend Reservoir, likely dragged there by boat trailers, known vectors for overland spread (Miller and Wilson 1989).

Voucher specimens: U.S.A. TEXAS. Harris Co.: Houston, wetland demonstration pond of Robert Browning Elementary School, forming dense surface cover, apiculate sporocarps in an elongated cymose system, 4 May 1998, *Ronald K. Jones* (FLAS, PIHG, TAES). LOUISIANA. Sabine Parish: Many, Toledo Bend Reservoir, abundant in coves and shallows, apiculate sporocarps in an elongated cymose system, 30 Nov 1998, *James M. Hyde* (FLAS).

ACKNOWLEDGMENTS

The author gratefully acknowledges assistance in identification from Nancy Coile, Wendy Forno, and David Mitchell.

REFERENCES

- FORNO, I.W. 1983. Native distribution of the *Salvinia auriculata* complex and keys to species identification. *Aquat. Bot.* 17:71-83.
- FORNO, I.W. and K.L.S. HARLEY. 1979. The occurrence of *Salvinia molesta* in Brazil. *Aquat. Bot.* 6:185-187.
- HATCH, S.L. 1995. *Salvinia minima* (Salviniaceae), new to Texas. *Sida* 16:595.
- JOHNSON, B. 1995. Giant salvinia found in South Carolina. *Aquatics* 17:22.
- LANDRY, G.P. 1981. *Salvinia minima* new to Louisiana. *Amer. Fern J.* 68:95.
- MILLER, I.L. and C.G. WILSON. 1989. Management of *Salvinia* in the Northern Territory. *J. Aquat. Plant Manage.* 27:40-46.
- MITCHELL, D.S. 1972. The Kariba weed: *Salvinia molesta*. *Brit. Fern Gaz.* 10:251-252.
- MITCHELL, D.S. and N.M. TUR. 1975. The rate of growth of *Salvinia molesta* (*S. auriculata* auct.) in laboratory and natural conditions. *J. Appl. Ecol.* 12:213-225.
- MONTZ, G.N. 1989. Distribution of *Salvinia minima* in Louisiana. Proc. 23rd Annual Meeting Aquatic Plant Control Research Program, 4-17 November 1988, West Palm Beach, Florida, Misc. Paper A-89-1, U.S. Army Corps of Engineers, Vicksburg, MS, pp. 312-316.
- MYERS, F.D. 1982. Memo to state and territory agricultural regulatory officials. U.S. Dept. of Agriculture, Plant Protection and Quarantine, DA #82-12.
- THOMAS, P.A. and P.M. ROOM. 1986. Taxonomy and control of *Salvinia molesta*. *Nature* 320: 581-584.